

Titanium Mill Products, Ingot, and Castings

FIRST QUARTER 1986



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BUREAU OF THE CENSUS

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The statistics in this publication are based on a survey of manufacturers and represent total U.S. shipments of titanium mill products, ingot, and castings. Estimates are included for

companies whose reports were not received in time for tabulation. A description of the survey methodology and related information appears on page 3.

Table 1. NET SHIPMENTS AND INVENTORIES OF TITANIUM MILL PRODUCTS

(Thousands of pounds)				
Product description	First quarter 1986		Fourth quarter 1985	
	Net shipments	Inventories	Net shipments	Inventories
Net shipments ¹	11,354	1,353	9,590	1,279
Sheet and strip.....	(2)	(2)	(2)	(2)
Plate.....				
Forging and extrusion billet.....	6,728	473	5,448	428
Rod and bar.....	1,669	658	1,472	688
Fastener stock and wire.....				
Extrusion.....				
Pipe and tubing.....	2,957	222	2,670	163
Powder.....				
Other.....				

¹Net shipments is the sum of mill product shipments plus mill products consumed in the manufacture of fabricated products, less total receipts.

²Data for sheet and strip, plate, extrusion (other than tubing), pipe and tubing, and other have been combined to avoid disclosing individual company data.

Table 2. TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1986 AND 1985

(Thousands of pounds)										
Quarter and year	Ingot					Mill products			Castings	
	Pro-duction	Receipts	Ship-ments	Con-sumption	Ending inventories	Pro-duction	Receipts	Net ship-ments ¹	Pro-duction	Ship-ments
1986										
First quarter.....	19,150	4,940	5,617	17,989	8,539	12,639	2,851	11,354	564	256
1985 ²										
Total.....	70,773	16,396	14,793	73,151	(X)	49,777	8,052	43,889	2,201	833
Fourth quarter.....	15,101	3,674	3,306	15,976	8,525	12,337	2,410	9,590	587	238
Third quarter.....	16,368	3,427	2,690	16,966	8,618	10,382	1,857	10,340	585	214
Second quarter.....	18,107	4,524	4,026	18,706	8,644	13,668	1,711	12,119	480	187
First quarter.....	21,197	4,771	4,771	21,503	8,790	13,390	2,074	11,840	549	194

(X) Not applicable.

¹See footnote 1, table 1.

²Inventories for the year are those shown for the fourth quarter.

Table 3. QUANTITY OF NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: 1986 AND 1985

(Thousands of pounds)

Quarter and year	Manufacturers' net shipments	Exports of domestic merchandise ^{1 2}	Percent exports to manufacturers' net shipments	Imports for consumption ^{1 3}	Apparent consumption ⁴	Percent imports to apparent consumption
FIRST QUARTER 1986						
Total.....	16,971	1,208	7	802	16,565	5
Titanium ingot and forging and extrusion billet ⁵	10,347	694	7	101	9,754	1
Titanium mill products.....	6,624	514	8	701	6,811	10
FOURTH QUARTER 1985						
Total.....	12,895	1,897	15	710	11,708	6
Titanium ingot and forging and extrusion billet ⁵	8,754	942	11	74	7,886	1
Titanium mill products.....	4,141	955	23	636	3,822	17

¹For comparison of Standard Industrial Classification (SIC) codes, Schedule B export numbers, and TSUSA import numbers, see table 4.

²Source: Bureau of the Census report EM 546, U.S. Exports.

³Source: Bureau of the Census report IM 145-X, U.S. Imports for Consumption and General Imports.

⁴Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

⁵Comparability of output, export, and import classifications for ingot and billet assume that bloom, sheet bar, and slab are reported as ingot or billet in the output numbers. Figures for imports of ingot and billet also include powder, crystal, and similar forms which are excluded from the output and export numbers.

Table 4. COMPARISON OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES, SCHEDULE B EXPORT NUMBERS AND TSUSA IMPORT NUMBERS: 1985

Product code	Product description	Export number	Product description	Import number	Product description
33562 74 ¹	Titanium ingots and forgings and extrusion billet.....	630.6520	Titanium ingots, billets, blooms, sheet bar and slabs	² 629.1460	Unwrought titanium
33562 79	Titanium mill products.....	630.6570	Wrought titanium metal, including alloys (excludes sponge, ingots, billets, blooms, sheet bars, slabs, waste, and scrap)	629.2000	Wrought titanium metal, including alloys (excludes waste, scrap, and unwrought metal)

¹For comparability of output, export, and import classification for ingot and billet, assume that bloom, sheet bar, and slab are reported as ingot or billet in the output codes.

²Figures for imports of ingot and billet also include powder, crystals, and similar primary forms which are excluded from the output and export codes.

DESCRIPTION OF SURVEY

Scope of Survey. This survey covers companies engaged in producing titanium ingot, mill products, and castings.

Survey Methodology. The statistics in this publication are collected by mail on Bureau of the Census quarterly Form ITA991, Titanium Metal. The panel for this survey includes all known producers of titanium ingot, mill products, and castings, approximately 30 companies.

Survey Error. Figures for the current quarter include estimates for panel members for which reports were not received in time for tabulation. Such missing figures are "imputed" based on quarter-to-quarter movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual quarterly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is not precisely known but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

Revisions to Previous Period Data. Statistics for previous quarter may be revised due to receipt of corrected data from respondents, including the receipt of late reports for which estimates were previously made as described above, and other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

EXPLANATION OF TERMS

Gross Shipments of Mill Products. Represents mill shapes shipped between producers plus mill shapes consumed in the production of fabricated products such as forgings.

Net Shipments of Mill Products. Represents gross shipments less receipts. For detail categories, net shipments also include consumption in the manufacture of other mill shapes.

Ingot. Includes direct castings of extrusion billet and other similar products.

Sheet and strip. Flat roll mill products with thickness less than or equal to .187 inch.

Plate. Flat roll mill products with thickness exceeding .187 inch and greater than 10 inches wide.

Forging and extrusion billet. Rounds, squares, and rectangles with a crosssectional area greater than or equal to 16 square inches and width less than 5 times thickness.

Rod and bar. Rounds greater than ½ inch diameter and less than or equal to 4½ inches in diameter. Squares with cross-sections less than 16 square inches. Rectangles with widths less than or equal to 10 inches and thickness less than 3/16 and cross-sectional area less than 16 inches square.

Fastener stock and wire. Rounds with diameter less than or equal to ½ inch.

Extrusions (other than tubing). Any product of any shape, except pipe and tubing, produced by forcing heated metal through a die.

Pipe and tubing. All seamless and welded pipe and tubing.

COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Also, there are a substantial number of imported commodities which have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

Valuation. There are different methods of valuation for the three types of data:

- **Domestic Output.** Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.
- **Exports.** Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance and other charges to the export point.
Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.
- **Imports.** Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

Duplication in Quantity and Value of Output. Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

Low-Value Export and Import Transactions. Detailed commodity information is not included for individual export shipments valued at not more than \$1,000. Generally, detailed commodity information is not included for individual import shipments valued at not more than \$1,000. For textiles and textile products, gloves, footwear, and miscellaneous rubber and plastics products, detailed commodity information is not included for individual import shipments valued at not more than \$250. This is believed to have only negligible effects on the statistics for the bulk of the commodities.

Manufacturers' Shipments, Not Specified by Kind. The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

Time Lag Between Output and Exports. There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

"Direct" vs "Total" Commodity Exports and Imports. Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

Used Commodities. With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

Geographic Area of Coverage. Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

RELATED REPORTS

An annual Current Industrial Report also is published in this series. The annual report summarizes quarterly figures and incorporates known revisions for both the current and previous year.

It also provides a single reference copy to replace the quarterly publications.

The Bureau of the Census publishes the following related reports:

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<i>Current Industrial Reports</i>		
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MA33G	Annually	<i>Magnesium Mill Products</i>
<i>Other Industrial Reports</i>		
M3-1	Monthly	<i>Manufacturers' Shipments, Inventories, and Orders</i>
(AS)	Annually	<i>Annual Survey of Manufactures (ASM)</i>
(MC)	Quinquennially	<i>Census of Manufactures</i>
<i>Foreign Trade Reports</i>		
EX 546	Monthly	<i>U.S. Exports</i>
IM 145 X	Monthly	<i>U.S. Imports for Consumption and General Imports</i>

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